REMARKS

In the Official Action, the Examiner rejected the claims under the first paragraph of 35 U.S.C. §112 for allegedly failing to comply with the written description requirement. The Examiner asserted that the specification did not support the recitation in claim 1 that the metal laminate had a solder heat resistance of not less than 300°C. However, the Examiner noted that the specification disclosed heat resistance temperatures of 300°C, 320°C, 350°C and 360°C and explained that a range would be supported for these specific embodiments, but not a range greater than 360°C. The Examiner then rejected the claims under 35 U.S.C. §103(a) as being unpatentable over the combination of Yamaya et al., U.S. Patent No. 4,987,207, in view of Matsuura et al., U.S. Patent No. 5,508,357, and Arai et al., U.S. Patent No. 6,054,509, for the reasons provided on pages 3-5 of the Action.

In response to the points raised in the Official Action, claim 1 has been amended to recite that the polyamic acid and/or polyimide that is compounded with the defined bismaleimide compound are/is obtained by reacting a diamine selected from the group consisting of 1,3-bis(3-(3-aminophenoxy)phenoxy) benzene, bis(3-(3-(3-aminophenoxy)phenoxy)phenyl) ether and 1,3-bis(3-(3-(3-aminophenoxy)phenoxy)phenoxy) benzene, and tetracarboxylic dianhydride represented by defined formula (12). Claim 1 has also been amended to delete the recitation that the laminate has a solder heat resistance of not less than 300°C. In addition, claim 3 has been cancelled without prejudice or disclaimer and new claims 8 and 9 have been added. New claim 8 recites that the metal laminate has a solder heat resistance in the range of 300°C to 360°C which is believed to be consistent with the Examiner's statement in the Official Action and new claim 9 recites a specific group of tetracarboxylic dianhydrides. Support for the recited diamines in claim 1

and the dianhydrides recited in claim 9 appears in the specification such as on pages 16-18 and certain of the Examples with the abbreviations being provided on page 37.

By following the teachings of the invention as defined by the claims now of record, one can obtain a metal laminate that can exhibit high heat resistance and adhesiveness (peel strength) at the same time. Such substantial advantages are described in the specification such as on pages 3-4 and pages 37-38. Furthermore, Table 1, reproduced below, shows that the laminate of the present invention can provide improved heat resistance and peel strength over Comparative Example 1 (wherein the bismaleimide compound is absent) and even Example 1 which uses a polyimide prepared from a diamine that is not recited in amended claim 1 (i.e., 1,3-bis(3-(3-aminophenoxy)phenoxy)benzene.

[Table 1]

	Diamine compound*1	dianhydride*2	Bismaleimide compound*3	Tg (DSC method)	Peel strength
Unit	mol	mol	wt%	°C	kN/m
Example 1	APB 0.0410	BTDA 0.0369	APB-BMI 40	106	1.6
Example 2	APB5 0.0329	BTDA 0.0312	APB-BMI 20	116	2.4
Example 3	APB5 0.0329	BTDA 0.0313	APB-BMI 15	125	1.6
Example 4	APB7 0.0200	BTDA 0.0190	APB-BMI 10	115	2.2
Comparative Example 1	APB 0.0410	BTDA 0.0369	-	195	0

The prior art cited in the Official Action does not disclose or suggest the invention as defined in claims of record and does not recognize the significant advantages which the present invention can attain. Yamaya et al. describes a thermosetting resin composition comprising defined amounts of a polyimide and a bismaleimide. Although the Examiner has recognized that Yamaya et al. does not

disclose the claimed metal laminate, applicants respectfully note that the patent also fails to disclose the presently claimed polyamic acid and/or polyimide that are/is obtained by reacting a diamine selected from the now claimed group of diamines and the recited tetracarboxylic dianhydride. Indeed, none of the diamines disclosed in column 3 of Yamaya et al. meet the now recited group of diamines set forth in claim 1. In addition, Yamaya et al. does not recognize that a laminate in accordance with the present invention can provide improvements in heat resistance and adhesiveness. Thus, the present claimed invention is clearly patentable over the fair teachings of Yamaya et al..

The Examiner has relied on Matsuura et al. for the teaching of a laminate composite comprising a metal foil layer and a polyimide layer. Even assuming that a proper basis exists for using the polyimide/bismaleimide composition of Yamaya et al. in the laminate of Matsuura et al., as the Examiner has postulated (which applicants do not concede), one of ordinary skill in the art would still not arrive at the presently claimed invention. As noted above, Yamaya et al. does not disclose a polyamic acid and/or polyimide which is obtained by reacting a diamine selected from the recited group of diamines set forth in claim 1 and Matsuura et al. does not remedy this substantial distinction. Furthermore, like Yamaya et al., Matsuura et al. does not recognize that by following the teachings of the present invention, one can obtain a metal laminate that can provide improved heat resistance and adhesiveness. Accordingly, the claims are also patentable even when additionally considering the teachings of Matsuura et al..

Arai et al. has been cited to show a metal foil for flexible printed circuit boards that can be selected from a variety of metal foils including electrolytic copper foils,

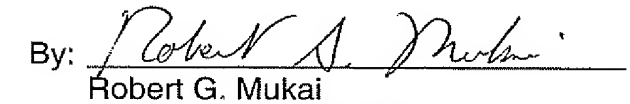
rolled copper foils and aluminum foils. As such, Arai et al. also does not remedy the deficiencies of the combination of Yamaya et al. and Matsuura et al..

For the reasons provided above, applicants respectfully submit that the claims now of record fully comply with the provisions of 35 U.S.C. §112 and are patentable over the cited prior art, particularly in view of the evidence of record. Accordingly, applicants request reconsideration and allowance of the present application.

Should the Examiner have any questions concerning the subject application, the Examiner is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

By: 
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